Province Wide Services

1999 Annual Report

on

Activities and Outcomes

Alberta
HEALTH AND WELLNESS

Province Wide Services Advisory Committee
January 2000

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Overview of Province Wide Services

In Alberta, basic health services are delivered through 17 Regional Health Authorities. The Health Authorities are funded for these services based on a population-based funding model which takes into account such factors as age, gender, and socio-economic status of the population in the region.

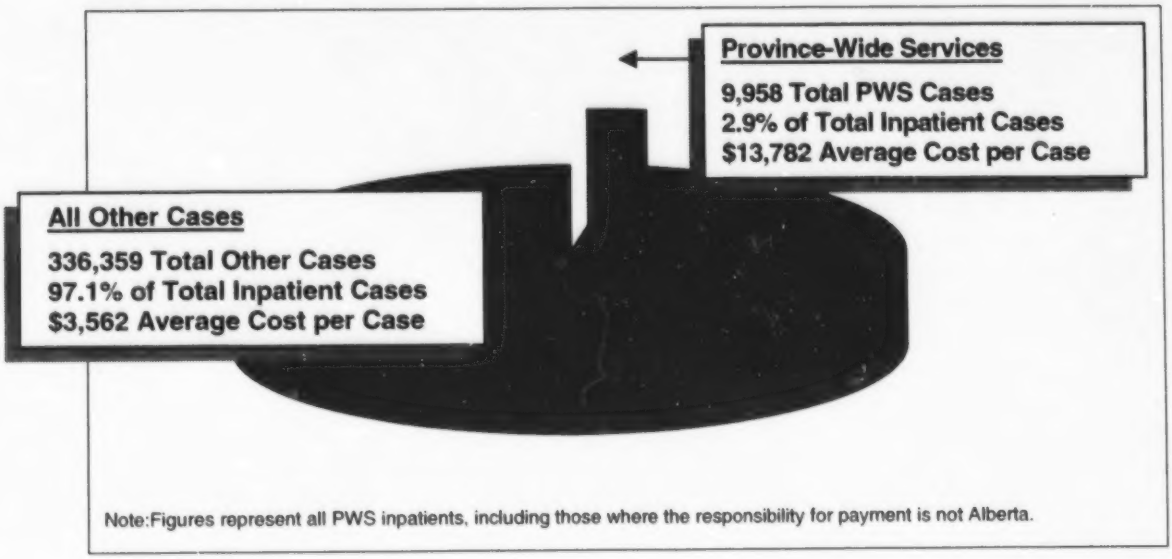
More complex health services require advanced technology, specialization, and are significantly higher in cost than basic services (see Figure 1). These services can be delivered more effectively and efficiently in concentrated areas such as Edmonton and Calgary, to all residents of Alberta. Inpatient services include all organ and bone marrow transplant surgery, selected adult and pediatric heart surgery, a portion of the major trauma and burns cases, selected neurosurgical procedures, a portion of neonatal cases, and selected oncology services. Province Wide Services funding is also used to provide renal dialysis services throughout the province, including satellite stations. Also included under Province Wide Services are selected clinic and home services and selected high cost drugs and devices. Funding is provided to the two regional health authorities, Capital and Calgary, as a block of funds for the entire set of defined province-wide services. Funds for province-wide services are allocated on the basis of projected activity and the actual costs incurred to provide these services.

Following the recommendations of the Funding Advisory Committee, in 1997 the Province Wide Services Advisory Committee was set up by the Minister of Health, Halvar Jonson to identify emerging Province Wide Services; make budget recommendations to the Minister; ensure accountability; access trends and outcomes; and assess new technology related to Province Wide Services. The Committee has evolved since then, from defining the scope of activities to the optimal use of what is funded, and defining performance measures, benchmarks and outcomes.

Over time, the Province-Wide Services Advisory Committee and appropriate Alberta Health and Wellness staff expect to continue to develop further information on outcomes and comparisons with benchmark data from centers with best practices. The Committee will continue to assess results, address issues, and improve the quality of province-wide services.

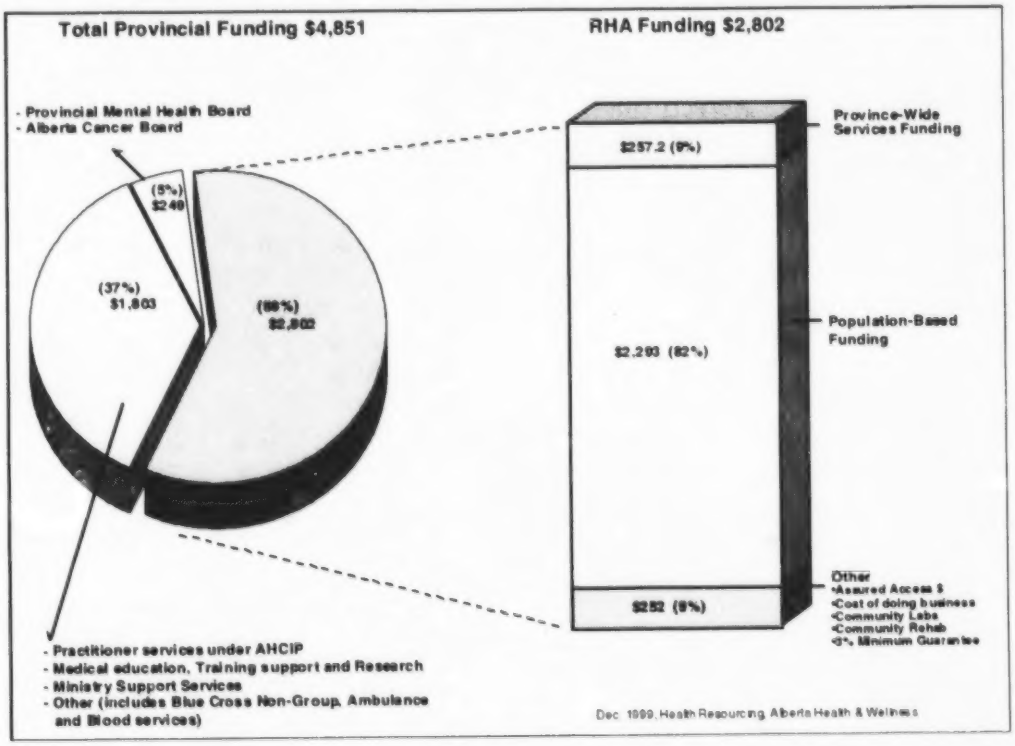
This report highlights the activities of the PWSAC for the year 1999, and identifies future work for the Committee.

Figure 1: 1998-99 Average Cost for Inpatient Cases –Province-Wide Services vs. All Other Cases


Province-Wide Services
9,958 Total PWS Cases
2.9% of Total Inpatient Cases
$13,782 Average Cost per Case
All Other Cases
336,359 Total Other Cases
97.1% of Total Inpatient Cases
$3,562 Average Cost per Case

Note:Figures represent all PWS inpatients, including those where the responsibility for payment is not Alberta.

Figure 2: Components of Health Funding in Alberta - 1999-00 Allocation (millions)



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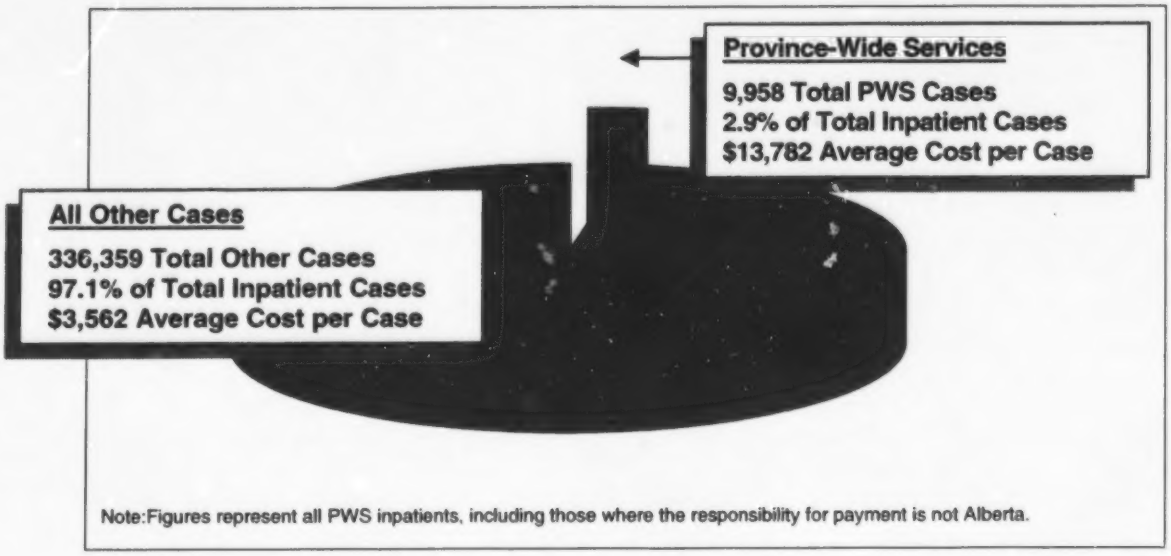
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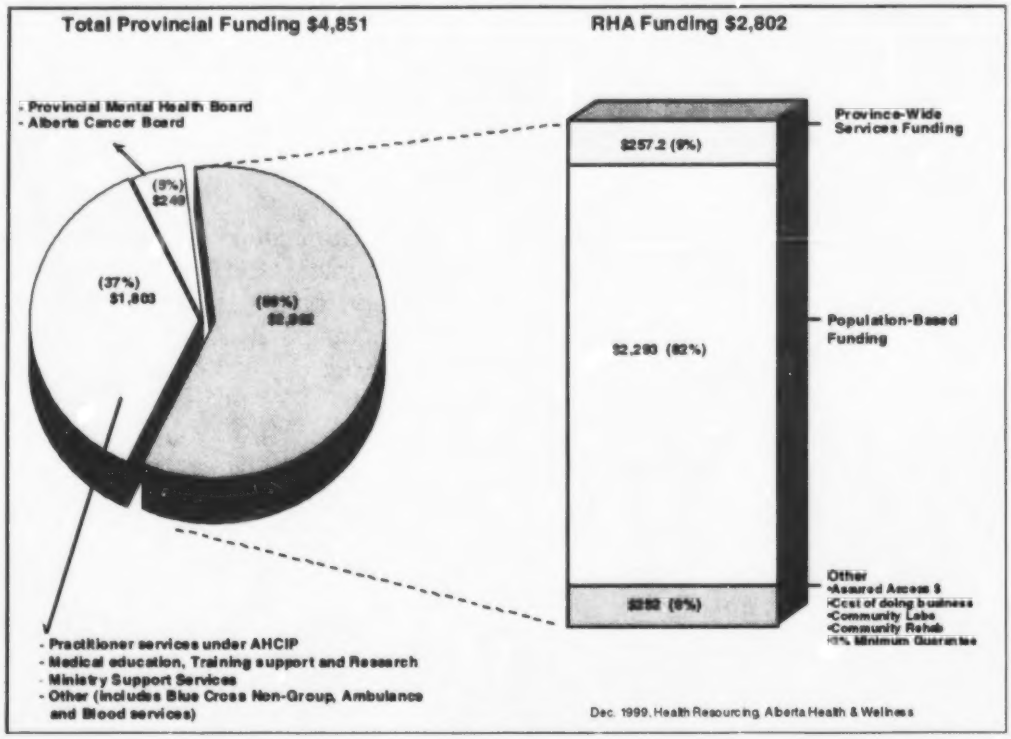


Mandate and Membership

The mandate of the Advisory Committee is to advise the Minister on issues regarding Province Wide Health Services. The mandate includes:

- Annually review the designated Province Wide Services to determine whether they should still be included, expanded, reduced or discontinued;
- Ensure the development of action plans for the provision of all province wide services which will address: operating sites, service volumes, and resources required (capital, human, and financial);
- Identify emerging province wide services and ensure the development of action plans leading to their successful introduction into the province;
- Ensure the development of systems of accountability that will measure the effectiveness of the province wide services on the basis of criteria for intervention, access, cost, and quality as compared to best practice or previously determined goals;
- Establish a mechanism for the assessment of new technology (drugs, procedures and devices) related to the province wide services, and advise the Minister on approval and funding;

Members consist of the following:

- **Chair**

- Four representatives of the CHA
- Four representatives of the CRHA
- One representative from each of northern, central and southern Regional Health Authorities appointed by the Provincial Health Authorities of Alberta
- Deans of the two Faculties of Medicine
- Secretariat and staff support by Alberta Health and Wellness

A list of the members of the Province Wide Services Advisory Committee is provided in the Appendix.

Inventory of Province-Wide Services

Following is a list of services in Alberta that are considered province-wide for funding purposes. Detailed Refinement Group Numbers (RGNs) are listed in the Appendix.

Inpatient Services

- Organ and Bone Marrow Transplants
- Selected Services for:
  - Trauma and Burns
  - Neurosurgery
  - Cardiovascular Procedures
  - Neonatology
  - Oncology

Clinics and Home Services

- Dialysis and Renal Program - Hemodialysis, Peritoneal Dialysis, and Renal and Transplant Outpatient Services/ Clinics
- Pre and Post Transplant
- Medical and Cancer Genetics
- HIV Clinics
- Poison and Drug Information Services (PADIS)
- Home Enteral Nutritional Therapy
- Perinatal Outreach
- Craniofacial Osseointegration (COMPRU)
- Children with Complex Health Care Needs (CCHN)
- Pediatric Transport
- Advanced Diagnosis of Sleep Disorders
- Pediatric and Neonatal Extra-Corporeal Life Support (ECLS)

High-Cost Drugs

- Cyclosporine, Tacrolimus, Mycophenolate, Azathioprine, OKT-3, and ATGAM (Immunosuppressants)
- Ondansetron and Neupogen (Chemotherapy)
- HIV Drugs: Zidovudine (AZT), Lamivudine (3TC), Stavudine (d4T), Zalcitabine (ddC), Didanosine (ddI), Indinavir, Saquinavir, Ritonavir, Nelfinavir, Abacavir, Efavirenz, Nevirapine, Delavirdine, Fortovase, and Protease Inhibitors (HIV)
- Human Growth Hormone (Chronic Renal Failure and Growth Hormone Deficiency)
- Pulmozyme (Cystic Fibrosis)
- Flolan (Primary Pulmonary Hypertension)

High-Cost Devices

- Implanted Cardiac Defibrillators
- Cranioplasty
- Cochlear Implants
- CPAP devices

Teaching and Research

- Indirect costs

Equipment

- Required for Province-Wide Services

Highlights of 1999

With the shift in focus from defining the scope of PWS to service management and evaluation of outcomes, the Province Wide Services Advisory Committee has concentrated on:

- √ managing the monies allocated
- √ obtaining benchmarks
- √ establishing templates for consistent reporting in outcomes and measures
- √ identifying the breakdown of PWS in terms of:
  - changes in activity
  - changes in cost
  - changes in services, and
  - identifying trends (reporting on activities and outcomes)

The work of the Committee in 1999 culminated in the provision of funding recommendations in December for the 2000/01 fiscal year (see Appendix). The following is an overview of Province Wide Services Advisory Committee activities during the year:

1. Province Wide Services Outcomes Symposium

In September 1999, a daylong symposium was held in Edmonton to share current knowledge of criteria, activity, outcomes and benchmarks used by providers of the major Province Wide Services. Dr. Robert Bear and Dr. Chris Eagle chaired the conference, with opening comments from Dr. Clarence Guenter, Chair of the Province Wide Services Advisory Committee. The following experts presented an overview of their program areas:

Program Area	Presenters	
♦ Renal Dialysis	Dr. Sandra Cockfield	Dr. Kenneth Taub
♦ Organ/Tissue Donation and Transplantation	Dr. Norman Kneteman	Dr. Serdar Yilmaz
♦ Cardiovascular Services	Dr. Arvind Koshal	Dr. Brent Mitchell
♦ Trauma	Dr. Mary van Winjngaarden	Pam Holberton, MN
♦ Neonatology	Dr. Philip Etches	Dr. Brent Scott
♦ Medical Genetics	Dr. Diane Cox	Dr. Floyd Snyder

The symposium provided an excellent starting point for determining performance measures for the programs outlined. Although it is not possible to include the presentations in their entirety, some highlights of their presentations have been included in the **Activities and Outcomes** section of this report.

2. Changes to Province-Wide Services Funding

A large part of the mandate of the Province Wide Services Advisory Committee is:

- ➢ to review the designated Province Wide Services to determine whether they should still be included, expanded, reduced or discontinued;

- to identify emerging province wide services and ensure the development of action plans leading to their successful introduction into the province.;
- to establish a mechanism for the assessment of new technology related to the province wide services, and advise the Minister on approval and funding.

In keeping with these responsibilities, the following Province Wide Services changes were made in 1999 for the funding year 2000/2001:

Inpatient Services

- Newly funded: Kidney/Pancreas transplants ($1.1 million)
- Newly funded: Pediatric major cardiovascular procedures (RGNs 1100-1102) ($0.9 million)

Clinic and Home Services:

- Additional PADIS funding for the Toxline ($0.1 million)
- Transfer of funds from Population Based Funding to cover the first $3,000 per month of home care for children with Complex Healthcare Needs($0.7 million)

High Cost Drugs

- Funding for Flolan was approved in 1999, but only for continuous long term therapy for primary pulmonary hypertension ($0.5 million 1999/00 $1.0 2000/01). CRHA/CHA are required to report each year on outcomes for each Flolan patient. Flolan funding for subsequent years will be based on a review of the results for these patients, and additional evidence from other jurisdictions.

3. Funding Procedures and Definitions Manual

In keeping with a desire to ensure transparency in funding, a Province Wide Services Funding Procedures and Definitions Manual was completed in 1999 to "describe as precisely as possible the various policies and procedures which have been developed pertaining to Province Wide Services funding".

4. Funding Estimates

In previous years, PWS funding was determined largely from CHA and CRHA projections of their own activities. With the development of a PWS database, the 2000/01 budget recommendations shifted to funded volumes derived from actual historical trends, taking into consideration any new developments. It is felt that clear and uniform trends in most Province Wide Services have allowed for good forecasts of activity.

Funded costs for the PWS inpatient services are based on data obtained form the Alberta Costing Partnership. For 2000/01 funding, a better definition of cost was adopted, which resulted in a 14% increase overall in the funded prices relative to the previous year.

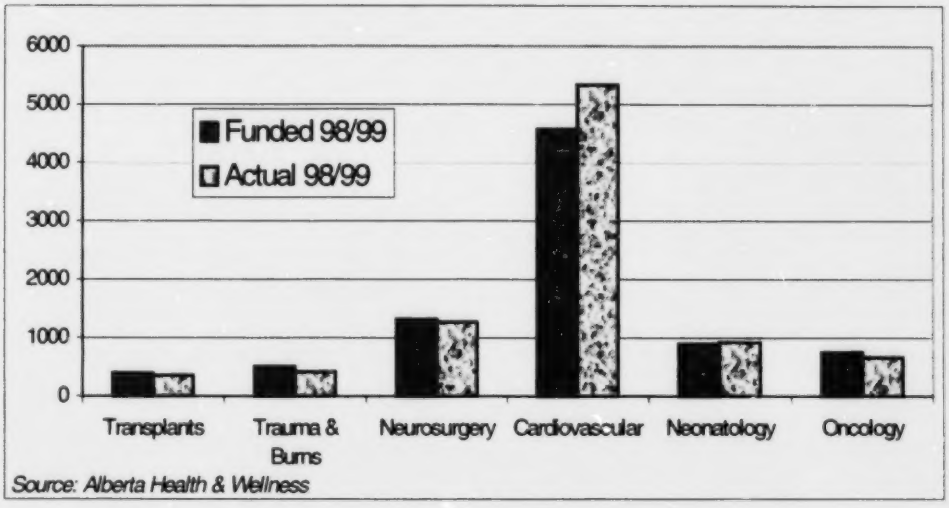
A new methodology for estimating the indirect costs of teaching and research was also adopted by the PWSAC.

1. Inpatient Services

Actual Province Wide Services inpatient activity totalled 8,992 separations in 1998/99, compared to a funded level of 8,448 separations. Both CHA and CRHA had a higher actual volume of separations overall than what was funded.

Excluding angioplasties, CHA's actual activity was 3,205 separations, compared to funded activity of 3,663. CHA performed 1,110 angioplasties versus only 526 funded procedures. The low volume of funded angioplasties was the result of reporting omissions in CHA which resulted in a substantial number of the angioplasties not being included in the historical inpatient angioplasty data. For CRHA, excluding angioplasties, actual activity was 3,059, about 2.7% more than the funded activity level of 2,980 separations. There was also a substantial underfunding of angioplasties for CRHA.

Figure 3: Funded vs Actual Inpatient Activity, CHA and CRHA, 1998-99



Source: Alberta Health & Wellness

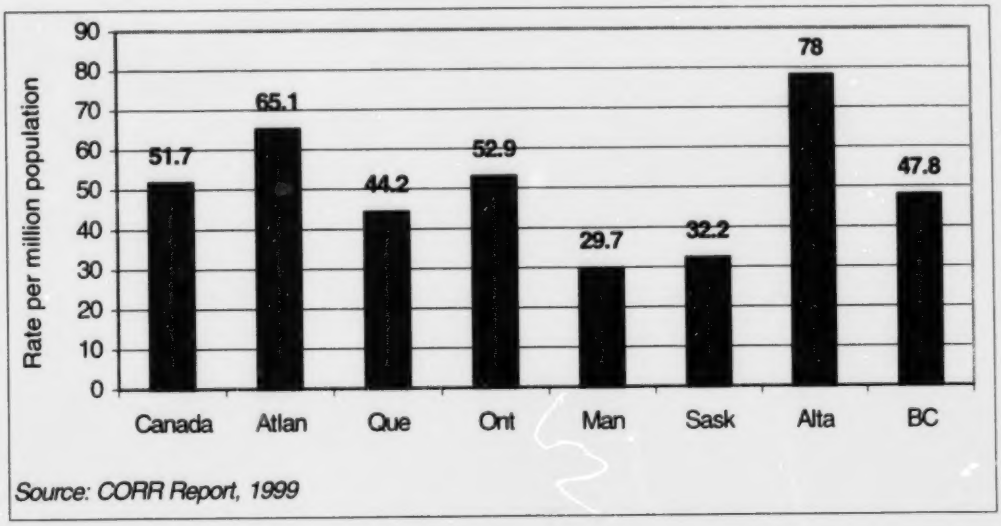
Table 1: Summary Table of Inpatient Services, Actual, Funded, Recommended

Inpatient Service				
Organ and Bone Marrow Transplants	318	362	388	414
Trauma and Burns	408	420	492	425
Neurosurgery	1,164	1,272	1,447	1,444
Cardiovascular	4,633	5,335	5,435	5,851
Neonatology	830	933	889	985
Oncology	594	670	649	680
Total Inpatient Service Volumes (Separations)	**7,947**	**8,992**	**9,300**	**9,799**

Organ/Tissue and Bone Marrow Transplants

- Province Wide Services Transplant activity includes: kidney, kidney/pancreas, heart, lung, liver, and bone marrow.
- In 1997, Alberta's transplant rate per million was the highest in Canada at 78 transplants per million population compared to Canada's rate of 51.7.

Figure 4: Transplants across Canada, 1997 (Rate per million Population)



Source: CORR Report, 1999

- In 1998/99, the number of transplants in Alberta increased by almost 14%; all categories of transplants showed increases except for the number of lung transplants, which showed a marginal decline from the previous year.

Table 2: Inpatient Transplants, CRHA and CHA, 1998/99

Heart Transplant	17	21	22	29
Kidney Transplant	103	117	128	146
Liver Transplant	24	36	31	49
Bone Marrow Transplant	88	114	127	129
Lung Transplant	4	12	10	9
Organ and Bone Marrow Transplants Total	**236**	**300**	**318**	**362**

Source: Calgary and Capital Annual Reports

- All bone marrow transplants, through the Alberta Bone Marrow Transplant Program, are done in Calgary Regional Health Region while Capital Health Authority does all heart, liver and lung transplants. The number of transplants is dependent on organ donations.

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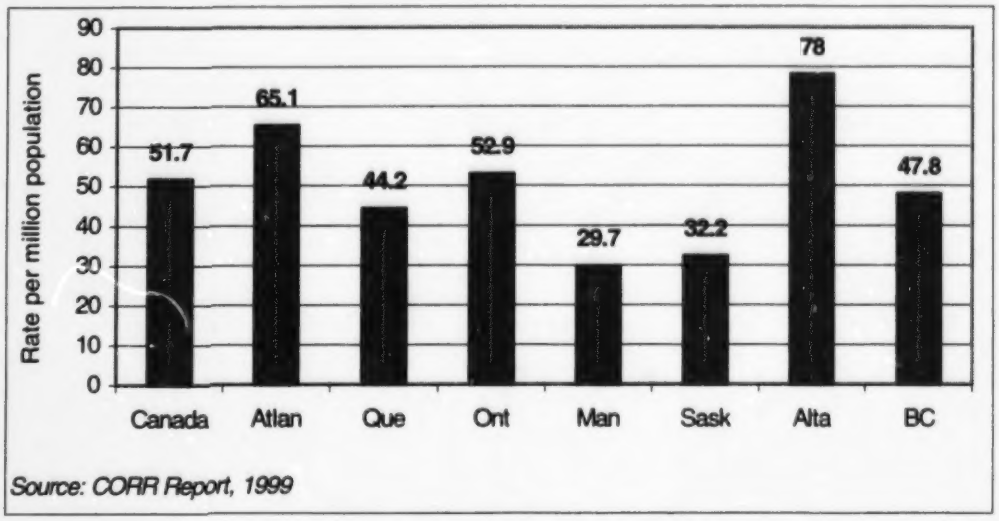
Figure 4: Transplants across Canada, 1997 (Rate per million Population)



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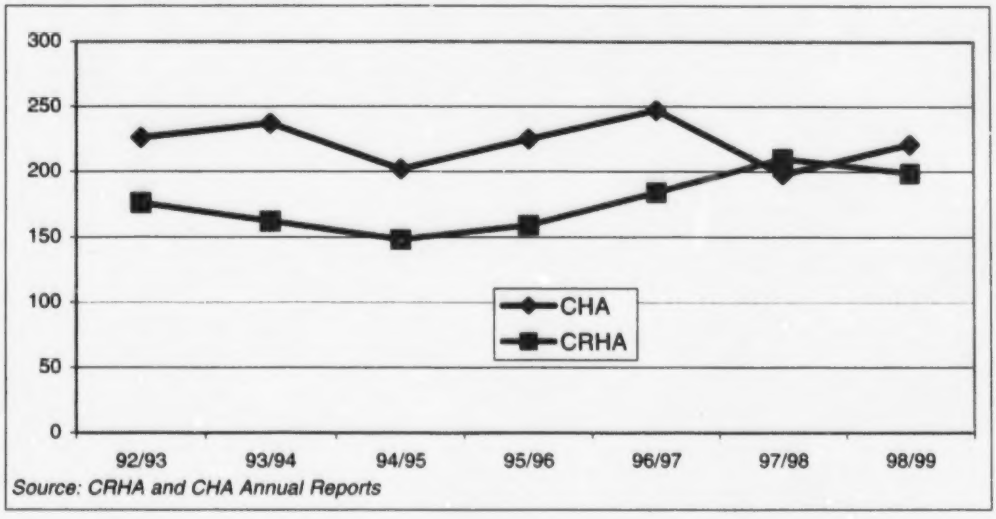
- According to the Canadian Organ Replacement Register Report, Alberta did 21.9% of the heart/heart-lung transplants in Canada in 1998.
- For kidney transplants, living donor organs can now be done laparoscopically. If the kidney transplant rate increases, this would relieve some of the dialysis expenditure pressure.
- In 1998/99, liver transplants in Alberta increased to 49 from 31 the previous year. Technology to transplant split livers from living donors may increase the liver transplant rate further.

Trauma and Burns

- Service activity in trauma and burns has remained relatively stable since 1992/93.
- It is difficult to predict activity in both trauma and burns with service activity dependent on such factors as weather, population growth, economic and industrial activity, and the success of prevention strategies.

Figure 5: Trauma & Burns Activity, CHA and CRHA, 1998/99



Source: CRHA and CHA Annual Reports

- Alberta currently has a Trauma Registry in four major hospitals; referral centres in Alberta, BC, NWT, Nunavut, Saskatchewan and Northern USA, and a telephone access line for physician referral consultation and transportation.
- Collaborative relationships have been developed with the Center for Injury Control & Research and Injury Coordinators, and direct communication with other acute care hospitals in the province has been established.
- Future directions include: the adoption of national standards for trauma centres; accreditation for tertiary trauma centres; standardization of pre-hospital service delivery; and enhancement of injury prevention programs.

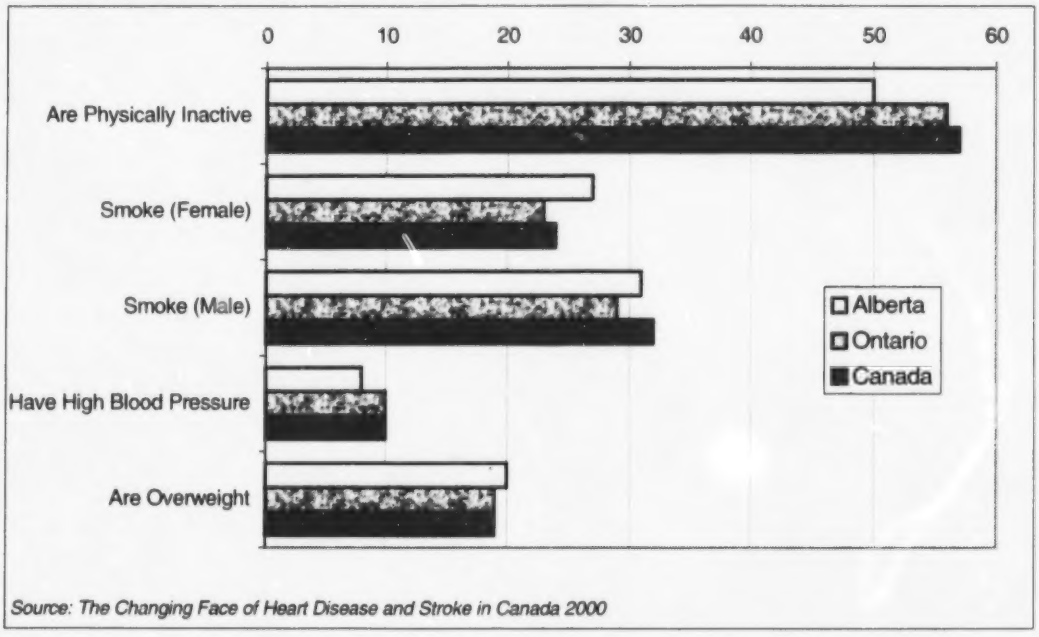
Neurosurgery

- Craniotomy except for Trauma, Spinal Procedures, and Adrenal and Pituitary Procedures are currently included under Neurosurgery.
- Increased activity in Neurosurgery in the Calgary Regional Health Authority is attributed to a number of factors, including an increase in the population; the hiring of additional neurosurgeons, and an attempt to decrease the wait list. Craniotomies increased by over 10% in the Calgary Region in 1998/99 compared to an increase of less than 1% in the Capital Region.

Cardiovascular Services

- According to the Heart and Stroke Foundation of Canada in The Changing Face of Heart Disease and Stroke in Canada 2000, "the high prevalence rate of the major risk factors...continues to contribute to the epidemic of heart disease and stroke in Canada." Although Alberta's rates for physical inactivity and blood pressure fare well in comparison to Ontario and Canada, rates of risk for smoking and weight do not compare favourably.

Figure 6: Proportion of Adults who have the following risk factor for Heart Disease and Stroke, Alberta, Ontario, and Canada, 1996/97



Source: The Changing Face of Heart Disease and Stroke in Canada 2000

- The volume of cardiac activity in 1998/99 increased from 4,633 to 5,335 inpatient separations. Population growth and aging coupled with the above risk factors are expected to contribute to further increases in future.
- Changes in cardiovascular practice have occurred as a result of the evolution of new technologies: for example, in performing angioplasties, better balloons, Stents, and Reopro are now available. Although the cost of the drug Reopro has increased significantly since 1997/98, its use will lead to

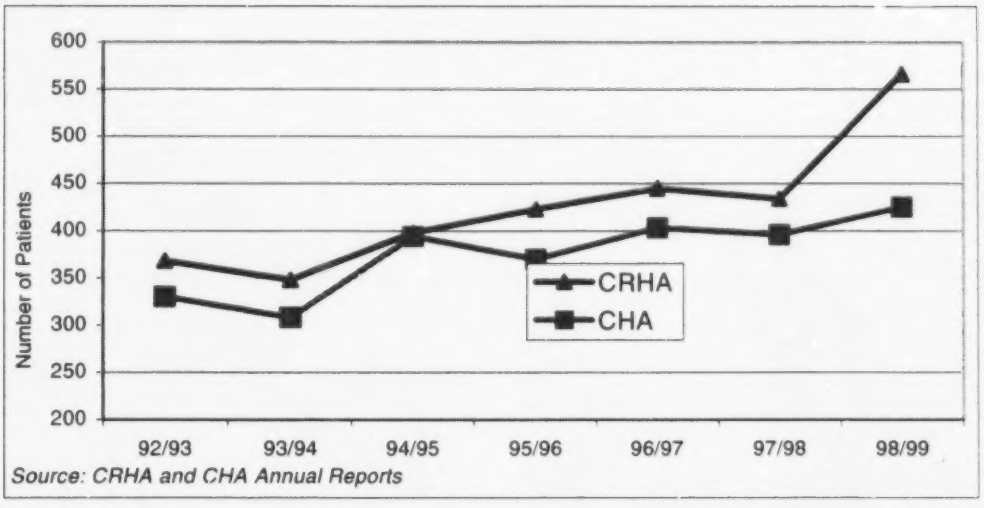
significant cost savings in terms of success rates, repeat procedures, and comparable cost of Stents.

- Recommended 2000/01 funding for coronary artery bypass graft (CABG) procedures reflect a population rate of 70 procedures per 100,000 adults in both CHA and CRHA. Determining the 'right' population rate for cardiac intervention is a key challenge for Province Wide Services.
- One of the data difficulties encountered for angioplasties was that many of these procedures in CHA were not properly identified for Province Wide Services. Better data has resulted in a very large increase in the number of angioplasties funded for CHA.
- 1999/2000 funding for angioplasties more or less equalized CHA and CRHA because the angioplasty volume by CHA was unknown due to data problems. However, recommended 2000/01 funding recognized the difference between the two centres, as is the case for other Province Wide Services. This means a higher level of funded angioplasties for CRHA, which is one of the world leaders for this particular cardiac procedure. The 2000/01 recommendations, however, are based on some closure of the large gap between CHA and CRHA. This was reflected in a low growth rate of funding for CRHA, and a high growth rate for CHA.
- Waiting times remained the same in 1998/99 as 1997/98 for urgent-in patients, but declined for urgent-out (deemed well enough to await admission for surgery at home) and for planned surgeries.

Neonatology

- Increasing survival of low birth weight babies (<1000 gm) can be attributed to improved obstetrical care and medical technologies.

Figure 7: Neonatology Activity, CRHA & CHA, 1992/93 to 1998/99



Source: CRHA and CHA Annual Reports

- Although the infant mortality rate (infant deaths per 1,000 live births) in Alberta declined from 4.9% in 1997 to 4.7% in 1998, the percent of newborns with low birth weight remained the same at 6.2% (Alberta Vital Statistics, May

1999). The increasing numbers of multiple births accounts for part of this – in Calgary alone, multiple births increased by 20% between 1997/98 and 1998/99. Increasing maternal age, the number of multiple births and the use of fertility drugs impact the number of low birth weight babies.

- The Province Wide Services low birthweight procedures have been growing at a faster rate in CRHA since 1994/95 due to the higher growth rate in the number of births in Calgary and Southern Alberta. Recommended volumes for 2000/01 represent average annual growth since 1996/97, of 4.5 % for CRHA, and 3.0% for CHA.

Oncology

- Inpatient activity increased in 1998/99 in both CRHA and CHA. Almost all of the increased activity can be attributed to a dramatic increase in volumes of acute leukemia. Acute leukemia cases now make up 90% of oncology Province-Wide Services cases in the Capital Region, and 20% of cases in the Calgary Region.

2. Clinics and Home Services

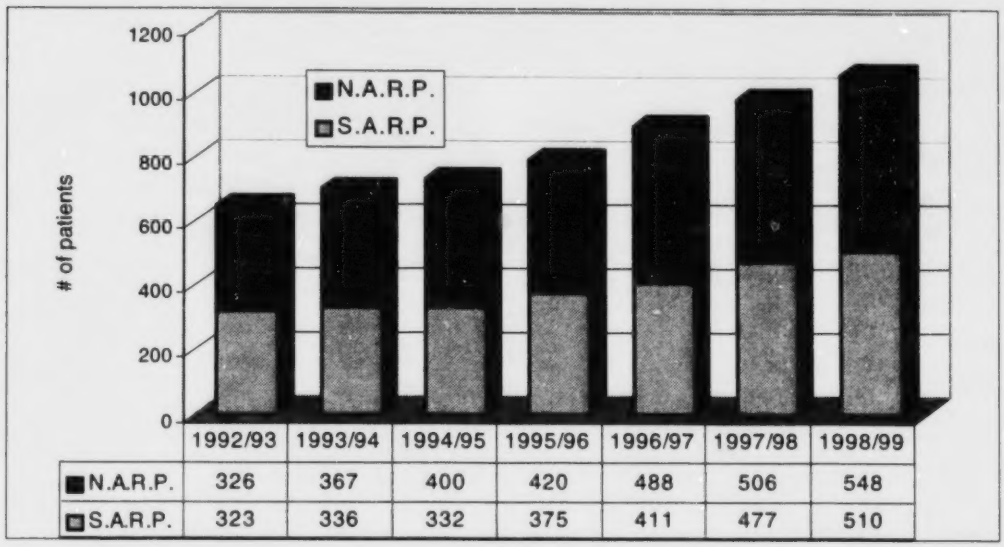
Funding for Dialysis Services makes up the bulk of total funding in Clinics and Home Services. Funding for Clinics and Home Services increased by over 15% between 1997/98 and 1998/99, particularly in the areas of Cancer Genetics and Children with Complex Healthcare Needs. Between 1998/99 and 1999/2000, approved funding increased by a further 35%, again with a substantial increase in funding to Genetics. Recommended funding for Clinics and Home Services for 2000/01 represents an increase of over 15%.

Renal Dialysis

- Renal Dialysis services covered under Province Wide Services, and delivered through the Northern and Southern Alberta Renal Programs, include:
  - Home Dialysis
  - In-centre Hemodialysis
  - Satellite Hemodialysis
  - Peritoneal Dialysis, and
  - Dialysis Clinics
- There are currently 17 satellite dialysis clinics throughout Alberta, operated by CHA and CRHA (see Appendix for location of satellite clinics).
- The prevalence of end stage renal disease is rising by 10% annually due to many factors, including:
  - an aging population
  - successful management of illness and broader application of dialysis
  - improved ESRD patient survival
  - weakening of renal transplant activity
  - higher incidence of diabetes, now the most common underlying condition causing ESRD

- Although transplantation is the most cost effective method of treatment of end stage renal disease, it is limited due to the availability of organs.

Figure 8: Renal Dialysis, Northern Alberta Renal Program and Southern Alberta Renal Program, 1992/93 to 1998/99



	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99
N.A.R.P.	326	367	400	420	488	506	548
S.A.R.P.	323	336	332	375	411	477	510

- The Province Wide Services Renal Task Force, with a mandate to provide advice and recommendations to the CHA and the CRHA on province-wide renal services, has committed to updating the Alberta Renal Program 5-year plan last developed in August 1994, and continues to meet to develop benchmarks, indicators and measures.

HOPE

- The HOPE Program was established in 1978 to coordinate all aspects of the procurement and distribution of organs and tissues for transplantation. Transplant organs can be donated by both cadaveric and living donors.
- During 1998/99, a total of 63 living donors, and 58 cadaveric donors donated organs within Alberta. Calgary reported 4.3 organs recovered per donor.
- A total of 362 transplants were actually performed in 1998/99 (198 in CRHA, 164 in CHA), compared to 317 in 1997/98. Transplantation offers new hope for patients with diseases such as renal disease (kidney transplant) or lymphoma (bone marrow transplant).
- Although transplant figures appear high, there are still many patients waiting for transplant in Alberta. Alberta places well comparing waiting lists for transplant internationally, with an overall waiting list of 112 per million population compared to Canada's rate of 113, and a rate in the US of 209.4.
- As of March 31, 1999, 96 patients were waiting for transplant in the Calgary Regional Health Authority and 139 patients were waiting for transplant in the Capital region.

Table 3: Patients Waiting for Transplant, 1998 (Rate per million population)

Kidney	62.9	91.7	142.9	101.5
Kidney/Pancreas	1.8	2.4	5.9	-
Liver	8.1	9.4	36.0	7.3
Heart	11.2	4.5	14.5	2.4
Lung	15.2	4.7	9.9	-
Overall	**112**	**113**	**209.4**	**-**

Source: CORR Report, 1999

- In September 1999, Federal, Provincial and Territorial Health Ministers agreed to establish a National Council on Organ and Tissue Donation and Transplantation. Health Canada is now working with provinces, territories, health care professions, ethicists and other interested parties on a business plan for a transplant council that will be reviewed by health ministries in November 1999.

Other Pre and Post Transplant

- Funding for related services before and after transplantation were funded for the first time under Province Wide Services in 1999/2000, including diagnostic costs for performing organ or bone marrow transplant, evaluation of patients for consideration of transplant suitability, and follow-up clinic visits and laboratory support.
- Because some of these services may already be funded under Transplantation Services, or under Population Based Funding Inpatient Services, some service boundaries must first be determined to approximate actual costs. Both CRHA and CHA have committed to identifying the appropriate elements; preliminary work has been done and services identified.

Medical Genetics

- Medical Genetics is a rapidly expanding field which provides patient counselling and genetic testing.
- Medical Genetics Services include:
  - Clinical Genetics
  - Biochemical Genetics
  - Cytogenetics
  - Molecular Genetics
- Rapid expansion in Medical Genetics is the result of tremendous advances in molecular biology, particularly in gene mapping – human genome project. Genes for specific diseases are being identified at a rate of about two per week.

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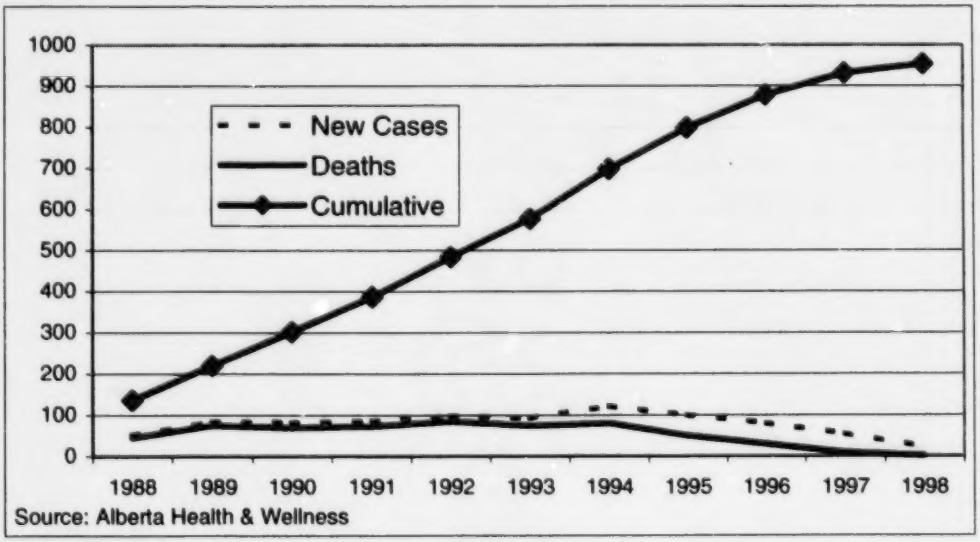
- Other factors that are contributing to growth in medical genetics include:
  - Increased participation of eligible families
  - Increased awareness by physicians of the role of chromosome abnormalities
  - New technologies (particularly FISH)
  - Cytogenetic testing is becoming critical in cancer diagnosis, prognosis, and treatment decisions
- In 1998/99, the two RHAs attempted to align genetic services to avoid unnecessary duplication, to cooperatively review the spectrum of medical genetics services currently provided in the province, and to recommend an overall delivery plan. As it stands, more detailed program/outcomes data is required for both Calgary and Capital, including utilization of services by RHAs throughout the province.
- Testing for Cancer Genetics goes back to the early 1980's, but in the 1990's, a designated program was established aimed at reducing cancer morbidity and mortality in high hereditary risk breast and colon cancer families.

HIV Clinics

- Access to the provincially funded antiretroviral agents and the expensive technologies used for staging HIV infection are made available through the Northern and Southern Alberta out-patient clinics in Edmonton and Calgary. The HIV clinics not only provide outpatient care, but also act as centres of knowledge, research and education with regard to HIV.
- Improved effectiveness of HIV drugs, particularly new triple therapy with protease inhibitors, has resulted in a reduction in the number of newly diagnosed AIDS cases and deaths, and associated hospitalization. However, this has had a substantial impact on HIV clinics and the drug budget as clients remain on drug therapy for the rest of their lives.

Figure 9: AIDS Cases: New, Deaths, and Cumulative, Alberta, 1988-1998



- The profile of cases by exposure category has changed dramatically since 1990. HIV Serological Testing in Alberta reports the change in risk factors as follows: in 1990, 68% of tests were due to homosexual activity and 6% were due to drug use; in 1997, 21% were due to homosexual activity and 45% were due to drug use.

PADIS

- PADIS, or Poison and Drug Information Service, is operated by the Calgary Regional Health Authority out of the Foothills Hospital. PADIS consists of several distinct but related services:
  - Alberta Poison Centre, offering information and advice about poisonings to the general public and health professionals;
  - The Drug Information Service, offering information about drug therapy to health professionals;
  - Toxline, providing advice and information about toxins in the workplace to workers in hospitals throughout Alberta's 17 health regions.
- In addition, PADIS is the focal point for the development, delivery, distribution and evaluation of education/research materials.
- Incoming calls for poison information accounts for the majority of the calls; drug and toxin calls account for about 22% of total. PADIS provides major benefits to Albertans in terms of saved lives, and reduced hospital emergency and doctor visits.

Table 4: Number of Incoming Calls for Poison, Drug & Toxicology Information

	Actual		Projected	
	1997/1998	1998/1999	1999/2000	2000/20001
Poison Information	31,142	29,305	29,891	30,500
Drug Information	7,148	6,823	6,860	6,900
Occupational Toxicology	1,422	1,333	1,342	1,350

Source: Calgary and Capital Annual Reports

- Population growth and an increase in promotional and educational campaigns account for part of the projected increase in volume in 1999/2000 and beyond.
- There is considerable variation in PADIS utilization by region. The most recent statistics show calls (poison and drug) per 1,000 population varying from 9.8 for Chinook Health Region, to 17.8 for the Peace Region.

Home Enteral Nutritional Therapy

- The Home Enteral Nutrition Program provides enteral nutrition to adults and children in their homes in order to maintain proper nutritional status and to avoid hospitalization. The most common diagnoses associated with this

treatment include neurological disorders such as cerebral palsy or ALS, pulmonary disease such as cystic fibrosis, and gastro-intestinal disease such as Crohn's disease.

- Increased patient volumes have resulted from population growth, a greater number of pre-term infants and survival of low birth weight babies, and increased emphasis and success on community and home care therapy

Table 5: Home Enteral Nutrition Activity, 1996/97 to 1998/99, Alberta

	CHA		CRHA	
	Pediatric	Adult	Pediatric	Adult
1996/97	45	59	203	119
1997/98	215	110	224	137
1998/99	282	227	313	227

Source: CHA and CRHA Annual Reports

Perinatal Outreach

- Available through both Capital and Calgary Health Regions, expenses of this relatively small program include rural outreach educational sessions and maintenance of a database.
- Because of the difficulty in retaining/recruiting experienced obstetrical nursing staff in rural regions, the Perinatal Outreach Program is seeing a steady increase in the number of requests for education.

COMPRU

- The Craniofacial Osseointegration and Maxillofacial Prosthetic Rehabilitation Unit (COMPRU), located in the Capital Region, was initiated in 1989, and consists of osseointegration procedures, non-osseointegration procedures and clinical maintenance procedures dedicated to reconstruction of the head and neck.
- Transitional PWS funding of $250,000 was provided in 1997/98 and 1998/99 for COMPRU, pending availability of more detailed financial data on the more high tech/high cost components of the program which might be appropriately funded under Province Wide Services. Following the provision of detailed budget estimates by CHA in 1998, 1999/2000 PWS funding was provided for COMPRU's osseointegration component only.

Lithotripsy

- Funded as a Province Wide Service until this year, Lithotripsy is funded under the Population Based Funding envelope in 1999/2000.

- The profile of cases by exposure category has changed dramatically since 1990. HIV Serological Testing in Alberta reports the change in risk factors as follows: in 1990, 68% of tests were due to homosexual activity and 6% were due to drug use; in 1997, 21% were due to homosexual activity and 45% were due to drug use.

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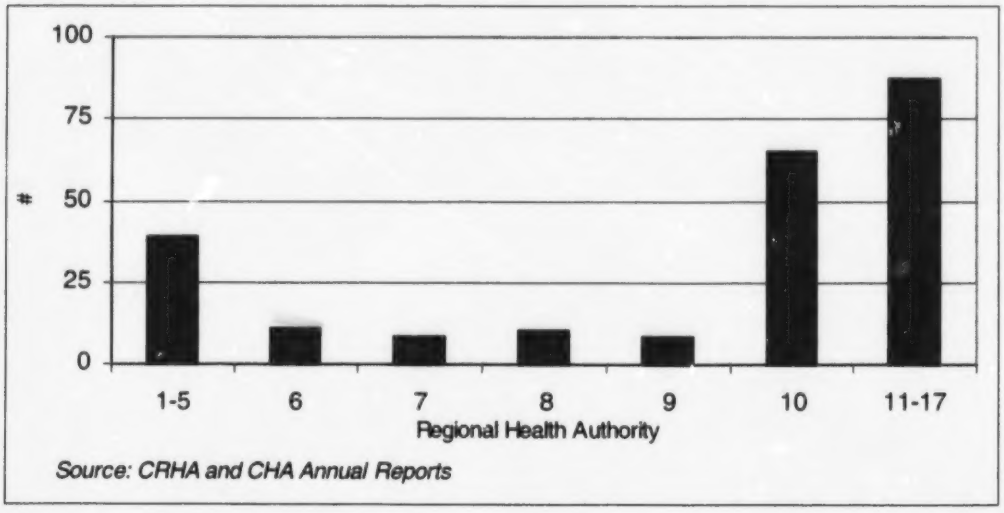
Children w/Complex Healthcare Needs

- CCHN is administered through the Calgary Regional Health Authority for the entire Province of Alberta.
- The primary goal of this program is to provide professional and financial support to the RHA Home Care Programs where children with complex health care needs reside, to enable the RHAs to meet these children's highly specialized needs in a cost effective and beneficial manner.
- Services covered are the home care costs for children with long term complex health care needs that are in excess of the provincially regulated maximum of $3,000 per month paid by the home Regional Health Authority.
- In 1999, it was recommended that PWS funding for 2000/2001 include a transfer from population-based funding to cover the first $3,000 per month for these children, previously paid by the home Regional Health Authority.

Pediatric Transport

- The CHA Pediatric Intensive Care Unit (PICU) transport team provides assessment, intervention, stabilization and transport of critically ill/injured children from referral hospital/nursing stations in Northern Alberta, Northwestern British Columbia, Northeastern Saskatchewan, Northwest Territories, and the Yukon to Edmonton.
- The Calgary Regional Health Authority pediatric team provides transport services and quality pediatric care to communities who do not otherwise have access to pediatric critical care specialists. The team serves Southern Alberta, Southeastern British Columbia and Southwestern Saskatchewan. Funding for both CHA and CRHA is only provided for in-province transports.

Figure 10: Pediatric Transports by Region of Origin, CRHA and CHA, 1998/99



Source: CRHA and CHA Annual Reports

- Between April 1, 1998 and March 31, 1999, 228 pediatric transports were made, 51 by CRHA, and 177 by the Capital team. It is anticipated that transports will increase in both centres, particularly CRHA, in 1999/2000.

- Calgary is currently developing a new service proposal for pediatric transport to bring it closer to the model utilized in Edmonton.

Sleep Disorders

- Many Albertans suffer from some type of sleep disorder as a result of underlying respiratory, neurological or psychiatric condition.

- Beginning with 1998/99 fiscal year, a 3-year pilot project was initiated, with funding allocated to CRHA and CHA for sleep disorder Level 1 diagnostic testing. Funding was also approved for the provision of Continuous Positive Airway Pressure (CPAP) treatment devices under Alberta Aids to Daily Living (AADL), beginning in 1999-2000, associated with the publicly funded Level 1 diagnostic tests.

- Of the patients tested for sleep disorders, about 50 to 60% will be diagnosed with Obstructive Sleep Apnea, most often treated with a CPAP device.

- Outcome measures have been identified, reporting templates have been developed, and benchmarks will be developed collaboratively with the sleep centres in CHA and CRHA.

Table 6: Sleep Disorders Activity, 1998/99, Alberta

Funding	750,000	750,000
Actual Expenditures	598,998	355,676
Number of PSG tests (Level 1)		
Diagnostic Tests	811	213
Adults	809	200
Pediatrics	2	13
Treatment Tests	235	301
Split Tests		141
Total Tests	**1,046**	**655**

Source: CHA and CRHA Annual Reports

- 809 adult patients underwent diagnostic testing in the Capital Health Region, compared to 200 in the Calgary Region. Calgary centres experienced recruitment difficulties which have since been resolved.

ECLS Neonatal and Pediatric

- Extra-Corporeal Life Support funding to Capital Health Authority began in 1999/2000 based on the number of projected cases and unit costs.

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Alberta Health currently provides funding through Province Wide Services to Capital and Calgary Regional Health Authorities for high cost drugs including

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The two health authorities reported actual expenditures for 1998/99 that were 5.6% higher in CRHA, and 11.8% lower in CHA, than what was actually allocated to them.

- For 1999/2000, Flolan is newly funded, while Reopro was deleted because of its inclusion in the inpatient cost weights. Flolan will be funded under strict criteria for the treatment of Primary Pulmonary Hypertension.
- Antiretroviral Agents include HIV+ Drugs which can only be dispensed through the Southern and Northern Alberta Clinics. Because of the success of these drugs, demand, and thus funding has increased dramatically.

Table 7 : Province Wide Services Funding of High Cost Drugs

	CHA			CRHA		
	Actual	**Funded**	**Recom'd**	**Actual**	**Funded**	**Recom'd**
Antiretroviral Agents	3,322,689	5,155,000	5,359,100	3,767,238	5,143,700	6,540,000
Cystic Fibrosis Drugs	666,330	627,000	850,800	431,074	482,000	625,900
Human Growth Hormone	396,425	807,500	482,500	486,432	749,963	556,900
Immunosuppressive Agents	6,541,469	8,974,295	7,886,282	3,667,189	4,295,600	4,737,685
Inpatient Drugs	1,141,729	557,600	767,600	1,105,270	497,500	580,535
Distribution Costs	300,000	330,000	340,000	300,000	330,000	340,000
Total High Cost Drugs	**12,368,642**	**16,451,395**	**15,686,282**	**9,757,203**	**11,498,763**	**13,381,020**

Source: Alberta Health & Wellness

- Pulmozyme is provided for the treatment of those patients diagnosed with Cystic Fibrosis.
- Somatropin and Somatrem are used in the treatment of growth hormone inadequacy, and in the treatment of patients who have growth failure associated with chronic renal failure.
- Immunosuppressive Agents are used for transplant recipients, and include Azathioprine, Cyclosporine, Atgam, Orthoclone OKT-3, Prograf, and now, Cellcept (Mycophenolate). Over 800 patients benefited from Azathioprine and Cycolsporine in 1998/99; almost 500 from Cellcept and Prograf.
- Neupogen and Zofran are used for bone marrow transplant patients.

This year, the High Cost Drug consideration process was formalized.

4. High Cost Devices

- Included under this category of Province Wide Services are Implanted Cardiac Defibrillators; Cranioplasties; and Cochlear Implants. Province Wide Services funding includes only the cost of the device, not the full episode of care.

Table 8 : Province Wide Services Number of High Cost Devices

	CRHA			CHA		
	1998/99		2000/01	1998/99		2000/01
	Funded	Actual	Recom'd	Funded	Actual	Recom'd
Implantable Cardiac Defibrillators	65	63	73	55	46	60
Cranioplasty	na	23	55	38	35	45
Cochlear Implants	10	13	13	6	7	8

Source: CHA and CRHA Annual Reports

- CPAP devices are funded under Alberta Aids to Daily Living (AADL), beginning 1999-2000, associated with the Level 1 testing of sleep disorders.

5. Teaching and Research

PWS funding for Teaching and Research is intended to compensate CHA and CRHA for the higher average costs per case associated with the additional costs incurred by their teaching hospitals.

For 1997/98, $25.6 million was allocated ($15.7 million and $9.9 million to CHA and CRHA respectively) based on recommendations from the Health Services Funding Advisory Committee and the *Review of Province Wide Services in Alberta* 1996 Green Report. This amount was frozen up to and including 1999/2000, pending the establishment of a methodology for estimating these costs. A methodology based on a fixed proportion of acute care budgets was finally recommended for 2000/01 funding.

6. Equipment

Funding for equipment is intended for the regular replacement of existing PWS equipment, and for incremental equipment required for the growing number of stations in the dialysis program.

In September 1998, the Province Wide Services Advisory Committee recommended a 7.5 year capital replacement cycle. Based on the capital inventories of both health authorities, this translates to $3.5 million annually to each of CHA and CRHA, plus $0.5 million to both to cover incremental equipment.

Due to resource constraints, 1999/2000 Province Wide Services equipment funding was left at $5 million. The full $8 million was recommended for 2000/2001.

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Access Issues

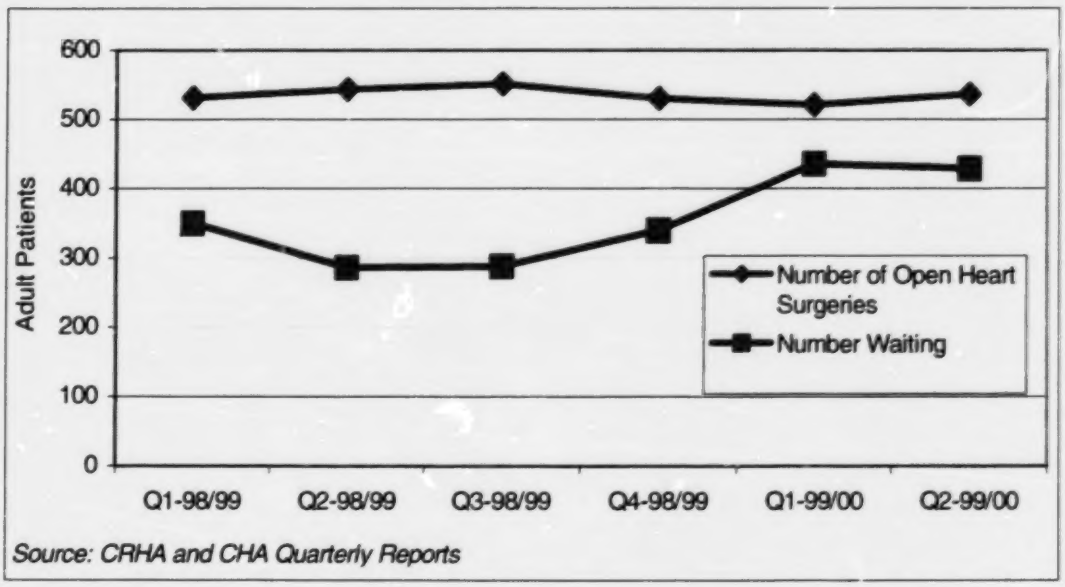
Access to health services continues to be an issue in Alberta, particularly for those specialized services which, because of their technical nature, are best performed in Calgary and Edmonton.

Both Capital and Calgary have collaborated on waiting list measurements and benchmarks for Province Wide Services. In particular, good wait list information has been established for organ transplants, and for cardiac surgery. Average wait times, for example, have been measured for different types of cardiac surgery, and benchmarks have been established, both by the RHA and by Alberta Health and Wellness.

In 1996, in response to a large increase in cardiac wait lists, over $10 million in funding was specifically targeted towards reducing wait lists in a number of different areas. As a result, between 1996 and 1999, wait lists for adult open heart surgery declined by 42%.

Recent statistics indicate however, that the number of people waiting for adult open heart surgery, increased in the first quarter of fiscal year 1999/2000 by 28% over the previous quarter, and, although the number declined in the second quarter, it stills remains high.

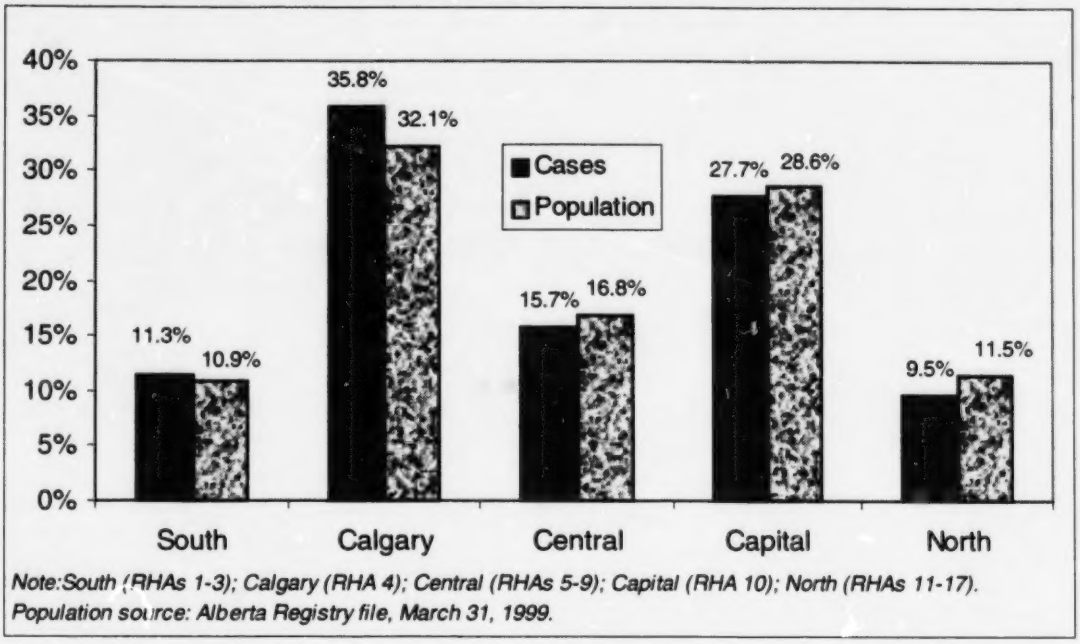
Figure 11: Adult Open Heart Surgeries and Number of Persons Waiting, Alberta



Source: CRHA and CHA Quarterly Reports

Although Province Wide Services are provided by the Capital Health Authority and the Calgary Regional Health Authority, they are accessible to all Albertans in all Regions. In 1998/99, for example, although the South Region of the Province, including RHAs 1 to 3, represented 10.9% of the population in Alberta, they made up 11.3% of all PWS Inpatient Cases.

Figure 12: Province Wide Services, Inpatient Activity by Alberta Region, 1998/99



Note:South (RHAs 1-3); Calgary (RHA 4); Central (RHAs 5-9); Capital (RHA 10); North (RHAs 11-17).
Population source: Alberta Registry file, March 31, 1999.

In 1998, Alberta, as part of a four-western-province consortium, was awarded $2.2 million from Health Canada's Health Transition Fund to develop and pilot test waiting list methodologies in certain key areas, including: MRI, hip/knee replacement, cataract surgery, general surgery and children's mental health services. The project's main objective is to improve the fairness of waiting lists, by developing reliable and valid clinical measures of patients' priority for services. Although these services are not Province Wide Services, once developed, these tools will be helpful in assessing waiting list systems and issues across clinical areas and jurisdictions.

Funding

Approved funding for Province Wide Services totalled $257 million for 1999/2000, including over $129 million for Inpatient Services (50.5% of funding), and $63 million for Clinics and Home Services (24.5% of total)(see Appendix). Recommended funding for 2000/2001 totals $303 million, an overall increase of close to 18%.

During the 1999/2000 fiscal year, the Government made a one time supplementary allocation to Regional Health Authorities. This included $41 million for Province Wide Services. This was intended to assist the CHA and CRHA with the multiyear shortfall on inpatient costing, equipment, dialysis and other shortfall items related to Province Wide Services. These needs have been better defined for the 2000/2001 budget cycle.

Future Work

The work of the Province Wide Services Advisory Committee is ongoing, revolving around the identification, implementation, maintenance, and evaluation of new services, drugs or technologies. However, there are also technical issues surrounding data and methodology which must be resolved. During the following year, the following issues will be outstanding:

- With the upcoming switch to ICD10/CCI, PWS must move to the CMG grouper for the 2000/2001 funding year. This will involve moving the 107 RGNs from the current PWS list to a comparable list using the new grouper, and revising historical data for comparison purposes;
- For 2000/2001 funding, Alberta Health and Wellness will develop budget projections for services in collaboration with CRHA and CHA. One of the key challenges over the next few years in setting appropriate PWS activity levels will be to improve information by tracking service numbers, evaluating outcomes, projecting future demands and comparing best practices;
- Alberta Cancer Board was invited by the Minister to be a participant in the PWSAC. A working group has been established to define ACB participation, role and dimension of activities in the PWSAC;
- New proposals for Province Wide Services funding continuously arise and must be evaluated in terms of meeting PWS criteria and where they fit with other growth priorities.

Concluding Remarks

The mission of Alberta Health and Wellness is to improve the health of Albertans and the quality of the health system by:

- ➔ *Setting direction, policies and provincial standards;*
- ➔ *Allocating resources;*
- ➔ *Ensuring delivery of quality health services, and*
- ➔ *Measuring and reporting on performance.*

The Province Wide Services Advisory Committee is committed to ensuring that Albertans receive the best possible medical service in the country. By providing high intensity specialized services in Calgary and Capital regions, it is possible to provide the highest quality of service to Albertans. PWS will continue to ensure that Albertans are protected with the most qualified specialists across the country, and provided with the best possible service by pursuing and addressing issues of best practices for criteria, outcomes and cost, and by continuing to promote cooperation among the RHAs in achieving its mandate.

APPENDIX

Province Wide Services Advisory Committee Members i

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Bibliography ix

Province-Wide Services Advisory Committee	
Member	**Organization**
Dr. Clarence Guenter, Chair	International Health and Development
Mr. Dalton Russell, CEO	Northern Lights Health Authority
Mr. Bryan Judd, VP Finance	David Thompson Health Authority
Mr. Richard Van Orman, VP Financial Services	Palliser Regional Health Authority
Ms. Sheila Weatherill, President and CEO	Capital Health Authority
Ms. Michelle Lahey, COO University of Alberta Hospital	Capital Health Authority
Mr. Allaudin Merali, VP Finance	Capital Health Authority
Dr. Lorne Tyrrell, Dean Faculty of Medicine & Oral Health Sciences	University of Alberta
Dr. Bob Bear, Executive VP Chief Clinical Officer	Capital Health Authority
Dr Chris Eagle, Senior Operating Officer, Acute Care	Calgary Regional Health Authority
Mr. Jack Davis, President and CEO	Calgary Regional Health Authority
Mr. Howard Waldner, Executive VP and COO	Calgary Regional Health Authority
Ms. Gayle Gorrill, VP and CFO	Calgary Regional Health Authority
Dr. Grant Gall, Dean, Faculty of Medicine	University of Calgary
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Mr. J.M. Turc, President and CEO	Alberta Cancer Board
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Dr. Tony Fields, Director	Cross Cancer Institute
Dr. Gavin Stuart, Vice President	Tom Baker Cancer Centre
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Province Wide Services Advisory Committee - Resource Staff	
Ms. Pat Breakey, Manager, PWS	Capital Health Authority
Ms. Kim Kerrone	Calgary Regional Health Authority
Mr. Tapan Chowdhury Senior Team Leader, Health Resourcing	Alberta Health & Wellness
Mr. Dennis Stang Senior Economist, Health Resourcing	Alberta Health & Wellness
Ms. Christine Brown Economist, Health Resourcing	Alberta Health & Wellness

Province-Wide Services Advisory Committee
Funding Approved for 1999-2000

		CHA	CRHA	Total
A.	**INPATIENT SERVICES**	**68,209,216**	**61,731,776**	**129,940,992**
	Transplants	5,150,844	5,536,143	10,686,987
	Trauma and Burns	3,972,143	3,388,403	7,360,546
	Neurosurgery	8,707,101	6,588,470	15,295,571
	Cardiovascular	34,660,107	31,663,965	66,324,072
	Neonatology	12,991,234	11,558,582	24,549,816
	Oncology	2,727,787	2,996,213	5,724,000
B.	**CLINICS and HOME SERVICES**	**31,179,100**	**31,822,073**	**63,001,173**
	Dialysis and Renal Program	20,128,779	18,705,107	38,833,886
	Pre and Post Transplant:	4,229,241	4,770,759	9,000,000
	Medical Genetics	2,653,080	2,849,640	5,502,720
	Cancer Genetics	280,000	280,000	560,000
	HIV Clinics	622,000	870,000	1,492,000
	PADIS	0	1,540,267	1,540,267
	Home Enteral Nutritional Therapy	846,000	846,000	1,692,000
	Perinatal Outreach	154,000	154,000	308,000
	COMPRU (osseointegration component)	704,000	0	704,000
	Children w/complex Healthcare Needs	0	883,000	883,000
	Pediatric Transport	440,000	173,300	613,300
	Sleep Disorders Level 1 Tests	750,000	750,000	1,500,000
	ECLS Neonatal & Pediatric	372,000	0	372,000
C.	**HIGH COST DRUGS**	**16,451,395**	**11,498,763**	**27,950,158**
	- Cyclosporine	4,700,000	2,400,000	7,100,000
	- Tacrolimus	1,800,000	1,215,600	3,015,600
	- Mycophenolate	1,600,000	500,000	2,100,000
	- Azathioprine	110,500	0	110,500
	- OKT-3	200,100	36,000	236,100
	- ATGAM	563,695	144,000	707,695
	- Ondansetron	160,000	163,500	323,500
	- Neupogen	150,000	86,400	236,400
	- HIV+ Drugs	5,155,000	5,143,700	10,298,700
	- HGH/Growth Hormone Deficiency	420,000	449,963	869,963
	/ Chronic Renal Failure	387,500	300,000	687,500
	- Pulmozyme	627,000	482,000	1,109,000
	- Flolan	247,600	247,600	495,200
	Distribution costs	330,000	330,000	660,000
D.	**HIGH COST DEVICES**	**1,501,000**	**1,543,000**	**3,044,000**
	Implantable Defibrillators	1,200,000	1,200,000	2,400,000
	Cranioplasty	175,000	175,000	350,000
	Cochlear Implants	126,000	168,000	294,000
E.	**CPAP DEVICES**	**50,000**	**50,000**	**1,000,000**
	AADL			900,000
	CPAP Coordinator	50,000	50,000	100,000
E.	**TEACHING and RESEARCH**	**15,681,251**	**10,184,624**	**25,865,875**
F.	**EQUIPMENT**	**2,500,000**	**2,500,000**	**5,000,000**
G.	**Unallocated Contingency**			**1,385,800**
	TOTAL PROVINCE-WIDE SERVICES	135,571,962	119,330,236	257,187,998

Province-Wide Services Advisory Committee Funding Recommendations for 2000/2001				
		CHA	CRHA	Total
A.	**INPATIENT SERVICES**	**75,561,232**	**80,684,466**	**156,245,698**
	Transplants	6,386,499	9,538,465	15,924,964
	Trauma and Burns	3,709,345	3,476,525	7,185,870
	Neurosurgery	9,251,175	8,549,060	17,800,235
	Cardiovascular	38,863,262	41,119,330	79,982,592
	Neonatology	14,481,792	13,904,651	28,386,443
	Oncology	2,869,159	4,096,435	6,965,594
B.	**CLINICS and HOME SERVICES**	**36,128,241**	**36,106,259**	**72,234,500**
	Dialysis and Renal Program	25,362,000	23,568,000	48,930,000
	Pre and Post Transplant	3,729,241	3,270,759	7,000,000
	Medical Genetics	3,000,000	3,000,000	6,000,000
	Cancer Genetics	300,000	300,000	600,000
	HIV Clinics	503,000	717,000	1,220,000
	PADIS	0	1,825,500	1,825,500
	Home Enteral Nutritional Therapy	888,000	888,000	1,776,000
	Perinatal Outreach	168,000	168,000	336,000
	COMPRU (osseointegration component)	616,000	0	616,000
	Children w/complex Healthcare Needs	0	1,456,000	1,456,000
	Pediatric Transport	440,000	163,000	603,000
	Sleep Disorders Level 1 Tests	750,000	750,000	1,500,000
	ECLS Neonatal & Pediatric	372,000	0	372,000
C.	**HIGH COST DRUGS**	**15,686,282**	**13,381,020**	**29,067,302**
	- Cyclosporine	4,624,000	2,508,000	7,132,000
	- Tacrolimus	1,301,800	1,235,800	2,537,600
	- Mycophenolate	1,290,000	765,050	2,055,050
	- Azathioprine	70,000	0	70,000
	- OKT-3	80,000	42,735	122,735
	- ATGAM	520,482	186,100	706,582
	- Ondansetron	125,000	0	125,000
	- Neupogen	150,000	87,935	237,935
	- HIV+ Drugs	5,359,100	6,540,000	11,899,100
	- HGH / Growth Hormone Deficiency	343,000	394,000	737,000
	/ Chronic Renal Failure	139,500	162,900	302,400
	- Pulmozyme	850,800	625,900	1,476,700
	- Flolan	492,600	492,600	985,200
	Distribution costs	340,000	340,000	680,000
D.	**HIGH COST DEVICES**	**1,454,250**	**1,858,250**	**3,312,500**
	Implantable Defibrillators	1,110,000	1,350,500	2,460,500
	Cranioplasty	128,250	156,750	285,000
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F.	**TEACHING AND RESEARCH**	**18,032,000**	**13,071,000**	**31,103,000**
G.	**EQUIPMENT**	**4,000,000**	**4,000,000**	**8,000,000**
H.	**UNALLOCATED CONTINGENCY**			**2,000,000**
	TOTAL PROVINCE-WIDE SERVICES	**150,912,005**	**149,150,995**	**302,963,000**

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H.	**UNALLOCATED CONTINGENCY**			**2,000,000**
	TOTAL PROVINCE-WIDE SERVICES	**150,912,005**	**149,150,995**	**302,963,000**

Summary of Province Wide Services Inpatient Activity, 1992/93 to 2000/01

INPATIENT SERVICES		CHA & CRHA Actual Cases							Funded	Recmd'd
Service	RDRG	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/2000	2000/01
Heart Transplant	1030-1033	7	17	23	17	21	22	29	25	29
Kidney Transplant	3020-3023	93	91	106	103	117	128	146	155	159
Liver Transplant	4800-4803	18	20	29	24	36	31	49	48	53
Bone Marrow Transplant	4810-4813	50	81	62	88	114	127	129	144	161
Lung Transplant	4950-4953	0	0	0	4	12	10	9	16	12
Organ and Bone Marrow Transplants Total		168	209	220	236	300	318	362	388	414
Craniotomies for Trauma	0020-0023	143	150	139	133	157	159	146	166	155
Traumatic Stupor & Coma	0271-0272	82	64	25	34	36	37	42	47	38
Craniotomies for Multiple Significant Trauma	4840-4843	21	15	13	18	19	23	16	29	19
Limb Reattach, Hip & Femur Proc. Mult. Trma	4850-4853	70	72	62	69	73	68	86	85	79
Maj. JT & Limb Reattach Proc. Mult Trma	4910-4913	46	54	63	90	98	89	87	113	89
Extensive Burns W/O O.R. Procedure	4570-4572	3	4	2	0	0	1	2	2	2
Extensive Burns W O.R. Procedure	4720-4723	3	9	3	5	8	5	7	11	8
Non-Extensive Burns W Skin Graft	4582-4583	34	31	43	33	40	26	34	39	35
Trauma and Burns Total		402	399	350	384	431	408	420	492	425
Craniotomy Except for Trauma	0010-0013	851	886	925	970	998	1,005	1,054	1,157	1,108
Spinal Procedures	0040-0043	192	176	199	177	150	159	218	199	228
Adrenal & Pituitary With no & CC	2860-2863	0	0	0	0	0	0	0	91	108
Neurosurgery Total		1,043	1,062	1,124	1,147	1,148	1,164	1,272	1,447	1,444
Cardiac Valve Proc W Card Cath	1040-1043	67	65	66	51	58	74	101	76	100
Cardiac Valve Proc W/O Card Cath	1050-1053	303	317	326	341	402	509	547	487	592
Coronary By-pass W Cardiac Cath	1060-1063	234	265	273	275	215	205	307	251	291
Coronary By-pass W/O Cardiac Cath	1070-1073	742	813	834	810	1,070	1,080	1,038	1,180	1,196
Total CABG's		976	1,078	1,107	1,085	1,285	1,285	1,345	1,431	1,487
Percutaneous Cardiovascular Procedures	1121-1123	1,235	1,261	1,562	1,436	1,655	2,073	124	2,935	1,601
Perm. Cardiac Pace Implant W/O AMI (PTCA-Stent)	1160-1163	0	0	0	0	0	0	2,091	0	1,538
Total Angioplasties or PTCA s		1,235	1,261	1,562	1,436	1,655	2,910	2,828	2,935	3,139
Cardiac Congenital & Valvular Disorders	1350-1352	387	397	254	257	231	244	161	0	0
Major Cardiovascular Procedures	1100-1103*	188	201	239	236	234	252	273	260	352
Other Cardiovascular Procedures	1080-1083	212	169	172	127	162	196	180	246	181
Cardiovascular Total ('98 CHA includes 513 "transfers")		3,366	3,488	3,726	3,533	4,027	4,633	5,335	5,435	5,851
Birth Weight < 1000G	3860-3863	48	28	30	46	73	61	99	74	115
Birth Weight 1000-2499G	3883	378	311	375	458	444	460	495	473	518
Birth Weight 1000-2499G and < 1000G	9150-9153	272	317	387	289	331	309	339	342	352
Neonatology Total		698	656	792	793	848	830	933	889	985
Pancreas, Liver & Shunt Procedures	1913	63	77	73	72	81	74	89	79	84
Pelvic Evis, Rad Hyster & Rad Vulvectomy	3530-3533	40	43	48	44	50	47	64	52	64
Acute Leukemia	4050-4052	190	197	179	212	281	234	321	251	336
Radiotherapy	4090-4092	119	156	86	148	141	114	67	122	67
Chemotherapy With Acute Leukemia	4920-4922	178	206	198	251	160	125	129	145	129
Oncology Total		590	679	584	727	713	584	670	648	680
HIV W Extensive O.R. Procedure	4880-4883	11	15	13	12	11	0	0	0	0
HIV with surgery Total		11	15	13	12	11	0	0	0	0
Total Inpatient Service Volumes (Separations)		6,280	6,508	6,809	6,832	7,478	7,947	8,992	9,300	9,799

Notes: *prior to 2000/01, Major Cardiovascular included only 1103; prior to 1996/97, angioplasties were not included .

Summary of Province Wide Services Inpatient Activity, 1992/93 to 2000/01

INPATIENT SERVICES		CHA & CRHA Actual Cases							Funded	Recmd'd
Service	RDRG	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/2000	2000/01
Heart Transplant	1030-1033	7	17	23	17	21	22	29	25	29
Kidney Transplant	3020-3023	93	91	106	103	117	128	146	155	159
Liver Transplant	4800-4803	18	20	29	24	36	31	49	48	53
Bone Marrow Transplant	4810-4813	50	81	62	88	114	127	129	144	161
Lung Transplant	4950-4953	0	0	0	4	12	10	9	16	12
Organ and Bone Marrow Transplants Total		**168**	**209**	**220**	**236**	**300**	**318**	**362**	**388**	**414**
Craniotomies for Trauma	0020-0023	143	150	139	133	157	159	146	166	155
Traumatic Stupor & Coma	0271-0272	82	64	25	34	36	37	42	47	38
Craniotomies for Multiple Significant Trauma	4840-4843	21	15	13	18	19	23	16	29	19
Limb Reattach, Hip & Femur Proc. Mult. Trma	4850-4853	70	72	62	69	73	68	86	85	79
Maj. JT & Limb Reattach Proc. Mult Trma	4910-4913	46	54	63	90	98	89	87	113	89
Extensive Burns W/O O.R. Procedure	4570-4572	3	4	2	0	0	1	2	2	2
Extensive Burns W O.R. Procedure	4720-4723	3	9	3	5	8	5	7	11	8
Non-Extensive Burns W Skin Graft	4582-4583	34	31	43	35	40	26	34	39	35
Trauma and Burns Total		**402**	**396**	**350**	**384**	**431**	**408**	**420**	**492**	**425**
Craniotomy Except for Trauma	0010-0013	851	886	925	970	998	1,005	1,054	1,157	1,108
Spinal Procedures	0040-0043	192	176	199	177	150	159	218	199	228
Adrenal & Pituitary With no & CC	2860-2863	0	0	0	0	0	0	0	91	108
Neurosurgery Total		**1,043**	**1,062**	**1,124**	**1,147**	**1,148**	**1,164**	**1,272**	**1,447**	**1,444**
Cardiac Valve Proc W Card Cath	1040-1043	67	65	66	51	58	74	101	76	100
Cardiac Valve Proc W/O Card Cath	1050-1053	303	317	326	341	402	509	547	487	592
Coronary By-pass W Cardiac Cath	1060-1063	234	265	273	275	215	205	307	251	291
Coronary By-pass W/O Cardiac Cath	1070-1073	742	813	834	810	1,070	1,080	1,038	1,180	1,196
Total CABG s		976	1,078	1,107	1,085	1,285	1,285	1,345	1,431	1,487
Percutaneous Cardiovascular Procedures	1121-1123	1,235	1,261	1,562	1,436	1,655	2,073	124	2,935	1,601
Perm. Cardiac Pace Implant W/O AMI (PTCA-Stent)	1160-1163	0	0	0	0	0	0	2,091	0	1,538
Total Angioplasties or PTCA s		1,235	1,261	1,562	1,436	1,655	2,910	2,828	2,935	3,139
Cardiac Congenital & Valvular Disorders	1350-1352	387	397	254	257	231	244	161	0	0
Major Cardiovascular Procedures	1100-1103*	188	201	239	236	234	252	273	260	352
Other Cardiovascular Procedures	1080-1083	212	169	172	127	162	196	180	246	181
Cardiovascular Total ('98 CHA includes 513 "transfers")		**3,368**	**3,488**	**3,726**	**3,633**	**4,027**	**4,833**	**5,335**	**5,436**	**5,851**
Birth Weight < 1000G	3860-3863	48	28	30	46	73	61	99	74	115
Birth Weight 1000-2499G	3883	378	311	375	458	444	460	495	473	518
Birth Weight 1000-2499G and < 1000G	9150-9153	272	317	387	289	331	309	339	342	352
Neonatology Total		**698**	**656**	**792**	**793**	**848**	**830**	**933**	**889**	**985**
Pancreas, Liver & Shunt Procedures	1913	63	77	73	72	81	74	89	79	84
Pelvic Evis, Rad Hyster & Rad Vulvectomy	3530-3533	40	43	48	44	50	47	64	52	64
Acute Leukemia	4050-4052	190	197	179	212	281	234	321	251	336
Radiotherapy	4090-4092	119	156	86	148	141	114	67	122	67
Chemotherapy With Acute Leukemia	4920-4922	178	206	198	251	160	125	129	145	129
Oncology Total		**590**	**679**	**584**	**727**	**713**	**594**	**670**	**648**	**680**
HIV W Extensive O.R. Procedure	4880-4883	11	15	13	12	11	0	0	0	0
HIV with surgery Total		11	15	13	12	11	0	0	0	0
Total Inpatient Service Volumes (Separations)		6,280	6,508	6,809	6,832	7,478	7,947	8,992	9,300	9,799
Notes: *prior to 2000/01, Major Cardiovascular included only 1103; prior to 1996/97, angioplasties were not included .										

Inpatient Refinement Group Numbers (RGNs)
Funded By Province-Wide Services

RGNs	DESCRIPTION
0010	Craniotomy Except For Trauma with No Complication Comorbidity
0011	Craniotomy Except For Trauma with Class C Complication Comorbidity
0012	Craniotomy Except For Trauma with Class B Complication Comorbidity
0013	Craniotomy Except For Trauma with Class A Complication Comorbidity
0020	Craniotomy For Trauma with No Complication Comorbidity
0021	Craniotomy For Trauma with Class C Complication Comorbidity
0022	Craniotomy For Trauma with Class B Complication Comorbidity
0023	Craniotomy For Trauma with Class A Complication Comorbidity
0040	Spinal Procedures with No Complication Comorbidity
0041	Spinal Procedures with Class C Complication Comorbidity
0042	Spinal Procedures with Class B Complication Comorbidity
0043	Spinal Procedures with Class A Complication Comorbidity
0271	Traumatic Stupor & Coma, Coma >1 Hr with Class C Complication Comorbidity
0272	Traumatic Stupor & Coma, Coma >1 Hr with Class B Complication Comorbidity
1030	Heart Transplant with No Complication Comorbidity
1031	Heart Transplant with Class C Complication Comorbidity
1032	Heart Transplant with Class B Complication Comorbidity
1033	Heart Transplant with Class A Complication Comorbidity
1040	Cardiac Valve Procedure with Card Cath with No Complication Comorbidity
1041	Cardiac Valve Procedure with Card Cath with Class C Complication Comorbidity
1042	Cardiac Valve Procedure with Card Cath with Class B Complication Comorbidity
1043	Cardiac Valve Procedure with Card Cath with Class A Complication Comorbidity
1050	Cardiac Valve Procedure without Card Cath with No Complication Comorbidity
1051	Cardiac Valve Procedure without Card Cath with Class C Complication Comorbidity
1052	Cardiac Valve Procedure without Card Cath with Class B Complication Comorbidity
1053	Cardiac Valve Procedure without Card Cath with Class A Complication Comorbidity
1060	Coronary Bypass with Cardiac Cath with No Complication Comorbidity
1061	Coronary Bypass with Cardiac Cath with Class C Complication Comorbidity
1062	Coronary Bypass with Cardiac Cath with Class B Complication Comorbidity
1063	Coronary Bypass with Cardiac Cath with Class A Complication Comorbidity
1070	Coronary Bypass without Cardiac Cath with No Complication Comorbidity
1071	Coronary Bypass without Cardiac Cath with Class C Complication Comorbidity
1072	Coronary Bypass without Cardiac Cath with Class B Complication Comorbidity
1073	Coronary Bypass without Cardiac Cath with Class A Complication Comorbidity
1080	Other Cardiothoracic Procedures with No Complication Comorbidity
1081	Other Cardiothoracic Procedures with Class C Complication Comorbidity
1082	Other Cardiothoracic Procedures with Class B Complication Comorbidity
1083	Other Cardiothoracic Procedures with Class A Complication Comorbidity
1100	Major Cardiovascular Procedures (pediatric) with No Complication Comorbidity
1101	Major Cardiovascular Procedures (pediatric) with Class C Complication Comorbidity
1102	Major Cardiovascular Procedures (pediatric) with Class B Complication Comorbidity

RGNs	DESCRIPTION
1103	Major Cardiovascular Procedures with Class A Complication Comorbidity
1120	Percutaneous Cardiovascular Procedures with No Complication Comorbidity
1121	Percutaneous Cardiovascular Procedures with Class C Complication Comorbidity
1122	Percutaneous Cardiovascular Procedures with Class B Complication Comorbidity
1123	Percutaneous Cardiovascular Procedures with Class A Complication Comorbidity
1160	PTCA with Coronary Artery Stent Implant with No Complication Comorbidity
1161	PTCA with Coronary Artery Stent Implant with Class C Complication Comorbidity
1162	PTCA with Coronary Artery Stent Implant with Class B Complication Comorbidity
1163	PTCA with Coronary Artery Stent Implant with Class A Complication Comorbidity
1913	Pancreas, Liver & Shunt Procedures with Class A Complication Comorbidity
2860	Adrenal & Pituitary Procedures with No Complication Comorbidity
2861	Adrenal & Pituitary Procedures with Class C Complication Comorbidity
2862	Adrenal & Pituitary Procedures with Class B Complication Comorbidity
2863	Adrenal & Pituitary Procedures with Class A Complication Comorbidity
3020	Kidney Transplant with No Complication Comorbidity
3021	Kidney Transplant with Class C Complication Comorbidity
3022	Kidney Transplant with Class B Complication Comorbidity
3023	Kidney Transplant with Class A Complication Comorbidity
3530	Pelvic , Radical Hyster & Radical Vulvectomy with No Complication Comorbidity
3531	Pelvic Evis, Radical Hyster & Radical Vulvectomy with Class C Complication Comorbidity
3532	Pelvic Evis, Radical Hyster & Radical Vulvectomy with Class B Complication Comorbidity
3533	Pelvic Evis, Radical Hyster & Radical Vulvectomy with Class A Complication Comorbidity
3860	Birth Weight < 1000g with No Neonate Complication Comorbidity
3861	Birth Weight < 1000g with Class C Neonate Complication Comorbidity
3862	Birth Weight < 1000g with Class B Neonate Complication Comorbidity
3863	Birth Weight < 1000g with Class A Neonate Complication Comorbidity
3883	Birth Weight 1000-2499g with Class A Neonate Complication Comorbidity
4050	Acute Leukemia without Major O.R. Procedure with No Complication Comorbidity
4051	Acute Leukemia without Major O.R. Procedure with Class C Complication Comorbidity
4052	Acute Leukemia without Major O.R. Procedure with Class B Complication Comorbidity
4090	Radiotherapy with No Complication Comorbidity
4091	Radiotherapy with Class C Complication Comorbidity
4092	Radiotherapy with Class B Complication Comorbidity
4570	Extensive Burns without O.R. Procedure with No Complication Comorbidity
4571	Extensive Burns without O.R. Procedure with Class C Complication Comorbidity
4572	Extensive Burns without O.R. Procedure with Class B Complication Comorbidity
4582	Non-Extensive Burns with Skin Graft with Class B Complication Comorbidity
4583	Non-Extensive Burns with Skin Graft with Class A Complication Comorbidity
4720	Extensive Burns with O.R. Procedure with No Complication Comorbidity

RGNs	DESCRIPTION
4721	Extensive Burns with O.R. Procedure with Class C Complication Comorbidity
4722	Extensive Burns with O.R. Procedure with Class B Complication Comorbidity
4723	Extensive Burns with O.R. Procedure with Class A Complication Comorbidity
4800	Liver Transplant with No Complication Comorbidity
4801	Liver Transplant with Class C Complication Comorbidity
4802	Liver Transplant with Class B Complication Comorbidity
4803	Liver Transplant with Class A Complication Comorbidity
4810	Bone Marrow Transplant with No Complication Comorbidity
4811	Bone Marrow Transplant with Class C Complication Comorbidity
4812	Bone Marrow Transplant with Class B Complication Comorbidity
4813	Bone Marrow Transplant with Class A Complication Comorbidity
4840	Craniotomy For Multiple Significant Trauma with No Complication Comorbidity
4841	Craniotomy For Multiple Significant Trauma with Class C Complication Comorbidity
4842	Craniotomy For Multiple Significant Trauma with Class B Complication Comorbidity
4843	Craniotomy For Multiple Significant Trauma with Class A Complication Comorbidity
4850	Limb Reattach, Hip & Femur Procedure, Multi-Trauma with No Complication Comorbidity
4851	Limb Reattach, Hip & Femur Procedure, Multi-Trauma with Class C Complication Comorbidity
4852	Limb Reattach, Hip & Femur Procedure, Multi-Trauma with Class B Complication Comorbidity
4853	Limb Reattach, Hip & Femur Procedure, Multi-Trauma with Class A Complication Comorbidity
4910	Maj Jt & Limb Reattach Procedure Of Upper Extremity with No Complication Comorbidity
4911	Maj Jt & Limb Reattach Procedure Of Upper Extremity with Class C Complication Comorbidity
4912	Maj Jt & Limb Reattach Procedure Of Upper Extremity with Class B Complication Comorbidity
4913	Maj Jt & Limb Reattach Procedure Of Upper Extremity with Class A Complication Comorbidity
4920	Chemotherapy with Acute Leukemia as Sec Dx with No Complication Comorbidity
4921	Chemotherapy with Acute Leukemia as Sec Dx with Class C Complication Comorbidity
4922	Chemotherapy with Acute Leukemia as Sec Dx with Class B Complication Comorbidity
4950	Lung Transplant with No Complication Comorbidity
4951	Lung Transplant with Class C Complication Comorbidity
4952	Lung Transplant with Class B Complication Comorbidity
4953	Lung Transplant with Class A Complication Comorbidity
9150	Birth Weight 1000-2499g with Respiratory Assistance
9151	Birth Weight 1000-2499g with Prolonged Respiratory Assistance
9152	Birth Weight < 1000g with Respiratory Assistance
9153	Birth Weight < 1000g with Prolonged Respiratory Assistance

Satellite Dialysis Units in Alberta

Source: CHA/CRHA

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